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BUREAU OF ENTOMOLOGY

GENERAL INDEX

TO

Miss Ormerod's Reports

ON

INJURIOUS INSECTS

1877 TO 1898.

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TO MISS ORMEROD'S

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INJURIOUS INSECTS.

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GENERAL INDEX

BY

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Curator of the Grosvenor Museum, Chester,

TO

ANNUAL REPORTS OF OBSERVATIONS

OF

INJURIOUS INSECTS

1877—1898.

BY

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WITH PREFACE BY THE AUTHOR.

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PREFACE.

JAN 20 1900

It is now twenty-two years since the series of Annual Reports to which the following Index refers were commenced by the issue of a short illustrated pamphlet, entitled "Notes for Observations of Injurious Insects," in which it was suggested that great service would be rendered towards checking the ravages of crop insect pests if reliable information could be procured as to preventive and remedial measures which were practically and on good authority found to be of use, together with coincident details bearing usefully on the subject.

For this purpose notes of some of the points which appeared of most importance for practical observation were given in the circular, together with short descriptions, and the best figures then attainable of about fourteen kinds of injurious insects which were selected for observation (just by way of making a beginning), and information was requested from agriculturists and entomologists conversant with the subject, on these or other crop infestations, for publication in a Yearly Report, of which copies were to be sent for acceptance by each contributor.

Subsequently the attention of all inclined to contribute information was especially drawn to the circumstance, that even the very shortest note of treatment known on good authority to be serviceable would be acceptable, as thus (working on year by year) we should collect a reliable mass of information, which might after a time be arranged continuously and in order, so as to give available records of the best known remedial treatment of the most troublesome crop pests of this country, from observations taken *in* this country, and therefore adapted to the needs of our climate and agricultural arrangements.

The idea was at once adopted, and in the twenty-two years in which I have been honoured by the information of our agriculturists, fruit-growers, and foresters being entrusted to my hands I have endeavoured in each successive Annual Report to give all the main points of information forwarded to me, taking care that (as far as lay in my power), both in honesty to my contributors, and also for satisfaction of my readers, all contributions should be accompanied by the name and the locality of residence of the sender, and (where practicable) also given in the original wording.

My own part of the work has been correspondence on the subject; identifications of the insects; including in difficult cases reference to entomological specialists, from whom I have never failed to receive kind assistance; and yearly arrangement of information received, with additions of accounts of life-history and habits, and also figures of the insects, often drawn expressly for the purpose; and also additional accounts of means of prevention and remedy where these were desirable and attainable, and issue of these in form of an Annual Report, of which acceptance of copies was requested of contributors and colleagues.

The following list gives a few short notes as to insect infestations which have been more especially reported on in the course of the series, either on account of unusually great prevalence in the year referred to, or because of their being customary farm troubles of serious importance; or, in some instances, on account of their presence in this country as farm pests not having been previously recorded. The year of Annual Report, and reference to pages, are appended to each note:—

Silver Y-Moth, *Plusia gamma*.—Great infestation of this moth, beginning early in June, from swarms which had been traced across the Continent, starting from the north-west of Africa in April; dates and localities of advance given. Threatened mischief from the destructive caterpillars stopped near Maldon, in Essex, by persistent downpour of rain (1879, pp. 4, 5).

“Turnip Fly” or **“Flea Beetle,”** *Phyllotreta nemorum*, and other species.—The year 1881 was remarkable for the prevalence of “Turnip Fly” in twenty-two counties of England, and eleven in Scotland. The loss by calculation of cost of seed, and cultivation for successive resowings on area of acreage estimated to be infested, at lowest calculation £503,952, irrespective of consequent losses by depreciation of stock (1881, pp. 47–97).

Wireworm, grub of **Click Beetle**, *Elatér (Agriotes) lineatus*, and other species.—Estimates of losses caused by attack; measures of prevention by treatment of pastures before breaking up, also of cultivation, dressings, and remedial treatment generally to check or lessen loss from attack (1882, pp. 22–63).

“Antler Moth,” *Charæas graminis*.—Outbreak of caterpillars on grass and plants on an area of ten miles (from east to west) of the Glamorganshire mountains (1884, pp. 15–18); also on grass of seven of the counties in the south of Scotland, doing great harm in hill pastures (1894, pp. 12–23).

First report on **Ox Warble** (1884, pp. 101–122).

“Hessian Fly,” *Cecidomyia destructor*, first appearance of, as a corn pest in this country. My own examination of the infested Barley near Hertford, and identification of the fly from specimens reared by myself from the infested stems, with confirmation of my determination by British and American entomologists (1886, pp. 10–26; and Appendix pp. 101–105). Also in the following year, accompanying

unusually warm weather, much increased appearance of the infestation, ranging in a more or less broad band along the east coast from Kent in the south of England to Cromarty in the north of Scotland, besides other localities, with maps of infested areas; identifications of parasites by Dr. Lindeman (Moscow) and Prof. C. V. Riley, Entomologist of the Department of Agriculture of the U.S.A. (on my own application to them) as being, with the exception of one species (which occurs on both continents), *all of Russian, and none of American kinds* (1887, pp. 12-54).

"Beet Carrion Beetle," *Silpha opaca*.—First recorded as a crop pest in England; in this case, to Mangolds (1888, pp. 91-96).

Orchard Insects (Winter Moth, *Cheimatobia brumata*, and other kinds).—Preventive treatment by "sticky banding," &c., spraying with kerosine emulsion; and introduction of spraying with Paris-green as a remedial orchard treatment in this country (1889, pp. 56-84).

Orchard Moth Caterpillars (Winter Moth, *Cheimatobia brumata*, and others).—Formation of the Evesham Committee of Horticultural Experiment, and notes of treatment and success of spraying with Paris-green given in detail; and notes also on London-purple (1890, pp. 74-106).

Diamond-back Moth, *Plutella cruciferarum*.—This infestation appeared in vast numbers both in England and Scotland in the summer of 1891, but was chiefly prevalent (as was the case with some other of the unusually great attacks noticed) along the eastern counties. Great damage was done not only from destruction of leafage of Swedes and Turnips by the caterpillars, but by their thus being prevented or retarded in bulbing. The observations contributed from many localities give detailed information, especially on amount of loss, preventive and remedial measures, and kinds of birds sometimes helpful in clearing the caterpillars (1891, pp. 105-164).

Wasps, *Vespa vulgaris*, and other kinds.—This year (1893) was remarkable for an enormous amount of Wasp presence, causing boundless annoyance, and also some damage to horses from their attacks where nests were ploughed up, and considerable loss was caused to fruit-growers. The prevalence of the infestation was worst in England, but was reported as being also troublesome in various parts of Scotland (1893, pp. 111-140).

Ground Beetles, *Pterostichus madidus*, *Harpalus ruficornis*, first report of, as injurious to Strawberry crops by devouring the ripe fruit (1894, pp. 93-97). The attack of these and some other species of Ground Beetles became much more prevalent in the following year; and in 1898 some good remedial measures were brought forward.

Horse Forest Fly, *Hippobosca equina*, habits, &c., of, with observations on peculiar appendages of the foot, and two plates showing their structure (1895, pp. 95-118).

Angoumois Moth, *Sitotroga (Gelechia) cerealella*.—Grain infestation imported in Barley from North Africa (1897, pp. 13-21).

Currant Gall Mite, *Phytoptus ribis*, history of, from first special record of presence in England in 1869; life-history, &c., of; and considerations as to preventive measures (1897, pp. 141-158).

Horse Forest Fly, *Hippobosca equina*, observations of, in a district of Glamorganshire and adjacent part of Brecknockshire, thus giving an additional locality of infestation to those previously recorded (1898, pp. 50-56).

Pear Gnat Midge, *Diplosis pyrivora*.—First record of widespread presence in this country since first observation in the year 1883 (1898, pp. 84-92).

The above notes refer to only a few of the more remarkable infestations which were noticeable on account of their great area of presence; or for being previously unrecorded in this country; or for their great injuriousness where warmth and drought of longer duration than is customary here favoured insect development, and was detrimental to vegetable progress.

Space does not allow of entering here on the great part played by weather influence in fostering or in checking great amount of insect presence; but the injurious devastations of leafage caterpillars early in the summer of 1896 coincidently with heat and drought; and, on the other hand, the immense numbers of the caterpillars of the Silver Y-Moth which were destroyed in Essex in 1879 by a persistent downpour of rain in the month of August, are examples of two very important kinds of effects of weather influence.

Reference to the Index will show many instances in which (especially in the case of various fruit insect pests) the various points of life-history have gradually been observed and recorded to our great benefit by scientific entomologists.

Bird presence as an insect protection has been much entered on, showing the benefit in ordinary circumstances; also the great benefit in *extraordinary* amount of insect infestations of the *extraordinary* amount of birds that flock to our aid. Also we have record of how even where insect injury had not previously been noticed as being in progress, attention has been helpfully directed to it by the gathering of birds to the fields. All kinds of birds which are even moderately insectivorous may be considered as helpful to an amount which makes up for occasional mischief (so long as they are not in overwhelming numbers), EXCEPTING THE HOUSE SPARROW, *Passer domesticus*; but that this bird is a national evil rests on well-proved observations.

Agricultural measures for lessening amount of insect presence, such as in many cases can be carried out in regular processes of cultivation, are entered on throughout the series of Reports; and amongst these are especially such breakings up of soil as will *throw out insects* (surface caterpillars, for instance) from their self-made winter shelters to cold and wet; and also (on the other hand) the beneficial use of the skim-coulter in

some cases in turning the top slice of land with its insect pests *thoroughly down* so as to bury these away. Chemical dressings of various kinds, which have come greatly more into use at the present day for farm service than twenty-two years ago, are much recorded as beneficial insecticides, especially gas-lime; nitrate of soda as injurious to Daddy Longlegs grubs, besides its excellences as a stimulant acting rapidly on crops requiring support in insect attack; and kainite also has been found useful in preventing small larvæ just below the surface of the ground coming to development.

The main points recorded of our chief attacks given in the Annual Reports up to 1891 I have condensed into connected papers in my 'Manual,' published in that year. Much increased attention has since then been given to orchard and bush fruit growing, and the contributions on this subject are given (brought up to date) in my 'Handbook of Orchard and Bush Fruit Insects,' published in the autumn of last year (1898).

With respect to the great mass of correspondence and reports which have accumulated year by year in my hands. Many of these, for various reasons, are of no public importance, and these I have not preserved. But there are a very large number of letters and communications which are of great value as being identifications and reports regarding rare forms of insect infestation, on which consultation was needed, contributed to me by many of the most leading entomologists, British and extra-British, of our time; and also there is a very large amount of practical information contained in communications, varying in length from short notes up to regular reports, regarding habits and means of lessening loss from insect ravage, which have been contributed by well-known agriculturists, fruit-growers, and foresters; almost all of these bearing the name and address of observer, and date of communication. These I have carefully preserved in a collection of many volumes as being an unbroken series of practical and scientific record, extending over a period of two-and-twenty years, of conditions bearing on appearance or methods of counter-acting presence of insect pests in the peculiar climatic and other conditions of our island, which is of no very large area of mileage, and isolated by its sea-girt state from most kinds of extraneous infestation, save such as are chiefly conveyed in grain and other trade imports, or are windborne to our shores. These documents might very likely have been more serviceably utilized year by year in more skilled hands than mine, but they could have been in none more desirous to make them of the fullest service; and in the belief that they are an important national trust, I have, in the dispositions of my will, bequeathed the papers where they will be in safe and honest keeping, both with regard to their preservation, and also that if the stores of information contained in them should be further utilized, it will be acknowledged rightfully to the observers.

For myself (as I have mentioned in the Preface to my Twenty-second Annual Report), so long as health sufficient for the work is granted me, and I am honoured by being asked to assist, it is only a pleasure to me to endeavour to do my very best, and I hope to continue to publish yearly results, but with a little difference in the plan, so that I may utilize *short notes* of useful means of prevention and remedy sent me, *in a separate section* following the body of the Report, and under a distinctive heading. Thus I hope we may gather up *all* information sent, but without encumbering the Reports with *repetition of figure and description*, save where necessary. With these slight differences (and all being well) I propose to commence a new issue as a "Second Series."

With regard to assistance in the work, which is increasingly becoming more than can be dealt with by one person, I have much help in secretarial matters from my resident lady secretary, Miss Hartwell; but in much press of application and occasional illness in the past year, I have found need of a scientific entomological colleague to whom, in order to save delay, I might apply as occasion required, to give desired information to applicants, and also who would oblige me by co-operation in extreme cases of minute microscopic investigation.

I have therefore, through the kind courtesy of Mr. Robert Newstead, Fellow of the Entomological Society, Curator of the Grosvenor Museum, Chester (who has for some years contributed from time to time information of valuable interest to my series of Annual Reports, and by whom the accompanying Index has been compiled), made arrangements with him which, by permitting me to communicate with him if occasion arises, remove my fear of difficulties occurring on the above heads, and give me great satisfaction, as I have long been acquainted with his careful insect investigations, and his great powers of microscopic observation and delineation, for examples of which I may refer to the forthcoming volumes on *Coccidæ*, prepared by him for publication by the Ray Society.

ELEANOR A. ORMEROD, F.E.S.

TORRINGTON HOUSE, ST. ALBANS :

October, 1899.

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EXPLANATION.

THE plan of reference adopted in the following General Index is to give, after each entry, the year of the Report, with page reference following, thus :—

Abraxas grossulariata, 1877, 16, 17; (&c.)

Following this are the details, each year of reference occupying a separate paragraph, thus :—

On White Ribes, 1877, 16; (&c.)

In the Plant Index (p. 43), the Animal Index (p. 57), and the Index to Unclassified Hosts (p. 58), the ordinary English names of the hosts are indexed, the scientific name follows. By “hosts” is meant the plant, animal, &c., which is the special subject of infestation of the various insect attacks. The infesting insects are mentioned previously in the General Index. These special indexes are given to facilitate identification of an attack.

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 BEAN, *Faba vulgaris*
Agrotis segetum, Turnip Moth (Surface
 Caterpillar), 1885, 74; 1887, 97
Aphidæ, Plant Lice, 1880, 45
Aphis rumicis (= *fabæ*), Black Dolphin,
 Bean Aphis, 1880, 24, 25, 45, 46;
 1881, 1, 2; 1882, 8; 1885, 1-5;
 1893, 5, 6
Bruchus fabæ = *obsoletus* (= *B. obtectus*),
 Bean-seed Weevil, 1895, 4-14
Bruchus granarius (= *rufimanus*),
 European Bean-seed Weevil, 1878,
 25, 26; 1885, 6-8; 1888, 19-24;
 1895, 4-14
Hepialis lupulinus, Garden Swift Moth,
 1896, 41
Julidæ, Millepedes, Julus-worms, False
 Wireworms, 1883, 7-9; 1894, 79
Julus guttatus, False Wireworm, 1883,
 7-9
Julus londinensis, False Wireworm,
 1883, 7-9
Julus terrestris, False Wireworm, 1883,
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Plusia gamma, Silver Y-Moth, 1883,
 78; 1897, 58
Polydesmus complanatus, False Wire-
 worm, 1883, 7-9
Sitones crinitus, Pea and Bean Weevil,
 1881, 38, 39
Sitones lineatus, Pea and Bean Weevil,
 1878, 26; 1880, 5, 6; 1881, 38, 39;
 1884, 4, 5
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Tipula oleracea, Daddy Longlegs,
 Crane Fly, 1883, 30; 1884, 25
Tylenchus devastatrix, Stem Eelworm,
 1890, 16-21; 1897, 93
Vanessa polychloros, Large Tortoise-
 shell Butterfly, 1894, 7, 8
 BEAN, FRENCH or KIDNEY, *Phaseolus*
vulgaris
Plusia gamma, Silver Y-Moth, 1883,
 78
Tetranychus telarius (= *telarum*), Red
 Spider, 1892, 121-124
 BEECH, *Fagus sylvatica*
Aphidæ, 1879, 37

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- Cryptococcus (Coccus) fagi*, Beech Coc-
 cus, or Beech-bark Felt Scale, 1897,
 6-10
Incurvaria capitella, Currant Shoot
 and Fruit Moth, 1891, 45
Orchestes fagi, 1881, 106
Pygæra bucephala, Buff-tip Moth,
 1898, 1
Xyleborus saxeseni (= *Xylographus*),
 Flat-celled Shot Borer, 1897, 81
 BEET (see MANGOLD)
 BIRCH, *Betula alba*
Aphidæ, 1880, 45
Pygæra bucephala, Buff-tip Moth,
 1898, 1
Pyrallis glaucinalis (= *Asopia costalis*),
 Hay-stack Moth, 1893, 17
Selandria atra = *Eriocampa limacina*
 (= *Tenthredo cerasi*), Cherry and
 Pear-tree Sawfly, 1893, 80
Trochilium sphægiforme, Alder Clear-
 wing Moth, 1892, 1
 BIRDS-FOOT TREFOIL, *Lotus corniculatus*
Colias edusa, Clouded Yellow Butter-
 fly, 1892, 27-31
 BLACKTHORN or SLOE, *Prunus communis*
Abraxas grossulariata, Currant and
 Gooseberry Moth, 1878, 18, 19;
 1879, 25; 1880, 35; 1885, 36
Aphidæ, Plant Lice, 1880, 45
Aphis (Phorodon) humuli, Hop Aphis,
 1883, 4, 6, 7; 1887, 83-86
Aphis (Phorodon) humuli, Damson Hop
 Aphis, 1884, 46-49
Gastropacha quercifolia, Lappet Moth,
 1893, 2; 1895, 2
Haltica nemorum, Turnip Flea Beetle,
 1878, 4
Orgyia antiqua, Vapourer Moth, 1885,
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 BUCKTHORN, *Rhamnus catharticus*
Abraxas grossulariata, Gooseberry and
 Currant Moth, 1878, 18
 BUCKWHEAT, *Fagopyrum esculentum* (= *Polygonum fagopyrum*)
Tylenchus devastatrix, Stem Eelworm,
 1887, 5
 BURDOCK, *Arctium lappa*
Chortophila conformis, Leaf Miner,
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Gortyna flavago, Frosted Orange Moth,
 1892, 119
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 78; 1897, 58

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- CABBAGE, *Brassica oleracea*
Acridium ægyptium, Locust of South-
 ern Europe, 1893, 48, 49
Agrotis exclamationis, Heart and Dart
 Moth (Surface Caterpillar), 1893, 59
Agrotis segetum, Turnip Moth, Surface
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- Aleyrodes proletella* (= *chelidonii*), Cabbage Powder Wing Fly, 1883, 54-56; 1885, 10, 11
Anthomyia brassicæ, Cabbage Fly, 1881, 8-10; 1883, 10-17
Anthomyia floralis, Radish Fly, 1883, 10
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Aphis rapæ, Turnip Aphis, 1885, 42
Baridius chloris, Cabbage-stem Weevil, 1892, 23-26
Centorhynchus sulcicollis, Cabbage and Turnip-gall Weevil, 1877, 17; 1878, 21, 22; 1880, 44; 1886, 87-89; 1888, 24-31; 1892, 144; 1895, 15-18
Forficula borealis, Earwig, 1886, 1-6
Haltica nemorum, Turnip Flea Beetle, 1881, 55; 1883, 76-77
Julidæ, Millepedes, False Wireworms, 1894, 79
Mamestra brassicæ, Cabbage Moth (Surface Caterpillar), 1878, 9; 1879, 17, 18; 1880, 27; 1881, 10, 11; 1882, 11
Meligethes æneus, Flower Beetle, 1891, 97-100
Ocypus olens, Devil's Coach-horse or Rove Beetle, 1892, 144
Phædon betulæ, Mustard Beetle, 1892, 92
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Pieris napi, Green-veined White Butterfly, 1879, 16, 17; 1896, 23-28
Pieris rapæ, Small White Butterfly, 1880, 26, 27; 1881, 5-8; 1887, 87-89
Pionea forficalis, Cabbage Garden Pebble Moth, 1891, 8-10
Plasmodiophora brassicæ, Finger-and-Toe, Anbury, or Slime Fungus, 1892, 143, 149-157
Plusia gamma, Silver Y-Moth, 1883, 78; 1897, 58
Plutella cruciferarum, Turnip Moth, 1892, 139-142; 1897, 124
Tipula oleracea, Daddy Longlegs, 1880, 9, 12, 13; 1883, 31
Trichocera hiemalis, Turnip Winter Gnat, 1892, 144

CALCEOLARIA sp.

Aphidæ, Plant Lice, 1880, 45

CARNATION, *Dianthus caryophyllus*

Tylenchus devastatrix, Eelworm, 1887, 7

CARROT, *Daucus hortensis*

Agriotes lineatus, Wireworm or Click Beetles, 1882, 58

Agriotes obscurus, Wireworm or Click Beetles, 1882, 58

Agrotis segetum, Turnip Moth (Surface Caterpillars), 1887, 97

Aphis papaveris = *carotæ* (*A. subterranea*), Carrot Aphis or Green Fly, 1883, 17, 18; 1884, 13-15

Julidæ, Millepedes, False Wireworms, 1884, 79; 1886, 55

Psila rosæ, Carrot Fly, Rust, 1877, 7, 8; 1878, 7-9; 1879, 14-16; 1880, 20-24; 1881, 12, 13; 1882, 11, 12; 1883, 18-20; 1888, 31-34; 1891, 11-14; 1894, 117, 118

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Centorhynchus sp., 1877, 17

Centorhynchus sulcicollis, Cabbage and Turnip Root-gall Weevil, 1895, 17

Pieris brassicæ, Large Cabbage White Butterfly, 1887, 87-89

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Aleyrodes phillyrææ, Moth Blight, Snowy Fly, or Powdered Wing Fly, 1883, 55

CELERY, *Apium graveolens*

Agrotis segetum, Turnip Moth (Surface Caterpillars), 1884, 15; 1887, 96

Hepialis lupulinus, Common Garden Swift Moth, 1885, 8-10

Julidæ, Millepedes, False Wireworms, 1884, 29

Piophilæ apii, Celery-stem Fly, 1891, 15

Tephritis onopordinis, Celery-leaf Fly, 1877, 10, 11, 18; 1878, 12-14; 1879, 13, 14; 1880, 18, 19; 1881, 13, 14; 1883, 20-23

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CHARLOCK, *Sinapis arvensis*

Centorhynchus contractus, Charlock Weevil, 1893, 74-79

Halticidæ, Turnip Flea Beetles, 1877, 6, 7

Haltica nemorum, Turnip Flea Beetle, 1878, 4, 6; 1881, 65, 66

Meligethes æneus, Turnip-flower Beetle, 1893, 63

Phædon betulæ, Mustard Beetle, 1885, 57; 1892, 92

Plutella cruciferarum (*Cerostoma xylostella*), Diamond-back Moth, 1891, 160; 1894, 101; 1897, 124

Tipula sp., Daddy Longlegs, Crane Fly, 1879, 11

Tipula (*Pachyrrhina*) *maculosa*, Spotted Crane Fly, 1895, 34

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- Aphidæ*, Plant Lice, 1880, 45
Cheimatobia brumata, Winter Moth, 1888, 1, 2
Hyponomenta padella, Small Ermine Moth, 1888, 12, 13
 ? *Mysus cerasi*, Cherry Aphis, 1882, 13
Phyllobius maculicornis, Green Leaf Weevil, 1884, 4-6
Phyllobius (Nemoicus) oblongus, Oblong Leaf Weevil, 1896, 128-131
Phyllopertha (Anisoplia) horticola, Garden Chafer, May-bug, 1892, 6-9
Selandria atra = *Tenthredo cerasi* (= *Eriocampa limacina*), Pear and Cherry Sawfly, 1883, 23-25; 1893, 80; 1896, 125-128
Tortrix cerasana, Tortrix Moth, 1888, 7
Tortrix ribeana, Tortrix Moth, 1888, 7
Vanessa polychloros, Large Tortoiseshell Butterfly, 1894, 6-12

CHESTNUT, *Castanea vulgaris*

- Carpocapsa pomonella*, Codlin Moth, 1896, 2

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- Anguillulidæ*, Eelworms, 1889, 1-12
Aphelenchus avenæ, Eelworm, 1889, 1-12
Aphelenchus modestus, Eelworm, 1887, 3
Aphis (Siphonophora) granaria, Grain Aphis, 1894, 24, 27
Apion apricans (= *flavifemuratum*), Clover Pear-shaped Weevil, 1878, 21; 1886, 6-9; 1890, 27
Apion assimile, Clover Weevil, 1890, 27
Apion flavipes, Yellow-legged or Dutch Clover Weevil, 1892, 37-40
Cecidomyia (? sp.), Gnat Midge, Red Maggot, 1889, 12-14
Cecidomyia leguminicola, American Clover-seed Midge, 1890, 23-27
Cephalobus sp., Eelworm, Nematoid-worm, 1887, 3; 1889, 3
Colias edusa, Clouded Yellow Butterfly, 1877, 13; 1878, 17, 18; 1879, 36, 37; 1892, 26, 27, 31
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Penicillium, White Mildew, 1889, 2
Peronospora trifolii, White Mildew, 1898, 19
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Phyllopertha (Anisoplia) horticola, Garden Chafer, May-bug, 1895, 27-30
Plectus cirratus, Eelworm, 1887, 3
Plectus granulosus, Eelworm, 1889, 1-12
Plusia gamma, Silver Y-Moth, 1883, 78; 1892, 31-37

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- Rhabditis* sp., Nematoid-worm, 1889, 3
Sciara (? sp.), Dipterous or Two-winged Fly, 1898, 21
Sclerotinia trifoliorum (= *Peziza ciborioides*), Fungus, 1898, 18, 19
Sitones spp., Weevil, 1889, 15; 1898, 21-25
Sitones lineatus, Pea Weevil, Cuddies, 1878, 26; 1879, 8; 1880, 5, 6; 1882, 82; 1883, 57-59; 1889, 15
Sitones puncticollis, Pea Weevil, 1882, 13-15; 1884, 3-5; 1892, 111-113
Tipula oleracea, Daddy Longlegs, 1881, 16; 1883, 29-31
Tylenchus devastatrix, Clover-sickness, 1887, 1-9; 1888, 72-80; 1889, 1-12; 1890, 16-22; 1894, 47; 1896, 44-52; 1897, 85-92; 1898, 17-29
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Agrotis segetum, Turnip Moth (Surface Caterpillars), 1893, 60
Astynomus (Acanthocinus) ædilis, Timberman Beetle, 1895, 70-72; 1897, 73, 74; 1898, 99, 100
Cecidomyia (? *albilabris*), Midge Fly, 1882, 89
Hylobius abietis, 1879, 31, 32; 1881, 45; 1889, 89-92
Hylurgus (Hylesinus) piniperda, 1879, 32, 33; 1880, 41, 42; 1881, 40-43; 1882, 84, 85; 1883, 61, 62; 1890, 113-118; 1896, 131, 141, 142; 1897, 60-68
Lophyrus sp., 1879, 38; 1887, 93-95
Lophyrus pini, Pine Sawfly, 1881, 43; 1882, 68, 69; 1884, 73-75
Lophyrus rufus (= *sertiferus*), Fox-coloured Sawfly, 1890, 118-121
Melolontha vulgaris, Cockchafer, May-bug, 1882, 85; 1884, 62, 63; 1891, 20, 21; 1896, 35, 39, 40
Orgyia antiqua, Vapourer Moth, 1885, 63
Otiorynchus niger, Black Weevil, 1885, 54
Otiorynchus picipes, Night-feeding Weevil, 1885, 54
Retinia buoliana, Pine-shoot Tortrix Moth, 1882, 86-88; 1895, 72-76
Retinia pinicolana, Pine Tortrix Moth, 1895, 75
Retinia pinivorana, Pine Tortrix, 1895, 75
Retinia turionana, Pine Tortrix, 1879, 29, 30; 1882, 86-88; 1895, 75
Rhizotrogus solstitialis, Chafer Beetle, 1895, 32
Schizoneura fuliginosa, Pine Aphis, 1883, 59-61

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Sirex gigas, Giant Sawfly, Wood Wasp, 1878, 17; 1879, 29; 1883, 62, 63; 1889, 84-88; 1890, 122-124; 1897, 69-73

Sirex juvencus, Steel Blue Sirex, 1883, 63; 1889, 84-88; 1897, 69-73

Trypodendron domesticum (= *Xyloterus domesticus*), Deciduous Tree-boring Beetle, 1898, 92-98

Trypodendron lineatum (= *Xyloterus lineatus*), Striped Pine-boring Beetle, 1898, 92-98

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Agriotes sp., Wireworm or Click Beetles, 1877, 9; 1878, 10-12; 1883, 37-40

Agriotes lineatus, Wireworm Beetle, Click Beetle, 1879, 8-10; 1880, 8; 1882, 22-63; 1883, 37-40; 1887, 23, 24

Agriotes obscurus and sp., Wireworm or Click Beetle, 1882, 22-63

Agrotis segetum, Turnip Moth (Surface Caterpillars), 1884, 85-91; 1887, 96

Anguillulidæ, Eelworms, 1886, 34-47

Aphidæ, Plant Lice, 1880, 45

Aphis (*Siphonophora*) *granaria*, Grain Aphis, 1879, 22, 23; 1881, 15, 16; 1883, 25-27; 1885, 14-19; 1892, 41-45; 1894, 24-27

Athöus ruficaudis, Wireworm or Click Beetle, 1878, 11

Cecidomyia (*Tipula*) *cerealis*, 1885, 28, 29

Cecidomyia destructor, Hessian Fly, 1886, 10-26, Appendix, 101-105; 1887, 12-54, 128, 129; 1888, 48-54; 1889, 26-30; 1890, 32-39; 1891, 21-24; 1892, 61-63; 1893, 19-22; 1894, 33-36; 1898, 33

? *Cecidomyia* (*Diplosis*) *equestris*, 1889, 31

Cecidomyia tritici, Wheat Midge (Wheat only), 1878, 15, 16; 1879, 21, 22; 1880, 31; 1881, 20, 21; 1882, 19, 20; 1883, 34-37; 1884, 31-35; 1885, 27-29

Cephalobus rigidus, Eelworm Tulip-root, 1888, 76-80

Cephus pygmaeus, Corn Sawfly, 1878, 15; 1880, 30, 31; 1886, 26-28; 1887, 59-63; 1888, 54, 55; 1892, 60; 1897, 21-23; 1898, 33

Charæas graminis, Antler Moth, 1885, 12-14

Chlorops tæniopus, Gout Fly, Ribbon-footed Corn Fly, 1877, 11, 12; 1878, 14, 15; 1882, 17-19; 1885, 24, 25; 1887, 54-59; 1889, 21-26; 1890, 28-31; 1892, 60; 1893, 6-11

Colias edusa, Clouded Yellow Butterfly, 1877, 16

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Hylemia coarctata, Wheat-bulb Fly (Wheat only), 1882, 20, 21; 1886, 49-52; 1888, 80-88; 1889, 35-41; 1890, 49-52; 1891, 31-39; 1892, 61

Julidæ, Millepedes, False Wireworms, 1889, 14, 15; 1894, 79

Melolontha vulgaris, Common Cockchafer, 1891, 18-21; 1896, 35, 39, 40

Miana (? *expolita*), Young Wheat Moth Caterpillars, 1894, 37

Oscinis frit (= *vastator*), Frit Fly, 1881, 18-20; 1887, 9-11; 1888, 34-43; 1889, 18-21; 1892, 51-57; 1895, 37-40

Plusia gamma, Silver Y-Moth, 1897, 57; 1883, 78; 1884, 85-91

Phyllopertha (*Anisoplia*) *horticola*, Garden Chafer, May-bug, 1896, 35-40

Rhizotrogus solstitialis, Chafer, May-bug, 1895, 31, 32

Sciara fucata, Young Wheat Maggot, 1883, 32-34

Sitotroga (*Gelechia*) *cerealella*, 1897, 13-21

Steropus madidus, Ground Beetle, 1885, 51-53

Thrips cerealium (= *physapus*), Corn Thrips, 1884, 28-31

Tipula sp., Daddy Longlegs, 1878, 22; 1883, 27-32

Tipula (*Pachyrrhina*) *maculosa*, Daddy Longlegs, Spotted Crane Fly, 1879, 10-12; 1895, 32-36

Tipula oleracea, Daddy Longlegs, Crane Fly, 1879, 10-12; 1880, 9-14; 1882, 16, 17; 1883, 27-32; 1885, 19-22; 1892, 46-51

Tylenchus devastatrix, Stem-sickness, Tulip-root, Segging, 1881, 17; 1886, 106-109; 1887, 1-9, 64-71; 1888, 72-80; 1889, 31-35; 1890, 16-21, 46-48; 1896, 44-52; 1897, 85-92; 1898, 17-30

Tylenchus (*Vibrio*) *tritici*, Wheat Cockles, Eelworm, False Ergot (Wheat only), 1885, 81-84; 1886, 48, 49; 1887, 65; 1894, 47-61

Zabrus gibbus, Corn Ground Beetle, 1888, 43-48

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CRATÆGUS sp. (see HAWTHORN)

CRESS (Genus et species non det.)

Meligethes æneus, Turnip-flower Beetle, 1893, 63

CRESS, COMMON BITTER, *Cardamine* sp.

Phædon betulæ, Mustard Beetle, 1892, 92

CRESS, WATER, *Nasturtium officinale*

Phædon betulæ, Mustard Beetle, 1892, 92

Trichoptera, Caddis Flies, 1896, 153-157

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Baridius chloris, Cabbage-stem Weevil, 1892, 24

Cecidomyia brassicæ, Turnip and Cabbage Gnat Midge, 1896, 151

Meligethes æneus, Turnip-flower Beetle, 1893, 63

Phædon betulæ, Mustard Beetle, 1877, 19; 1885, 55-59; 1892, 92

Pionea forficalis, Cabbage Garden Pebble Moth, 1891, 8-10

Plusia gamma, Silver Y-Moth, 1892, 31-37

Plutella cruciferarum (= *Cerostoma xylostella*), Diamond-back Moth, 1894, 98

CUCUMBER, *Cucumis sativus*

Collembola, Springtails, 1894, 111

Heterodera (Anguillula) radiculicola, Root-knot Eelworm, 1892, 127-133; 1893, 99-108

CURRENT, BLACK, *Ribes nigrum*

Abraxas grossulariata, Currant Moth, Magpie Moth, 1879, 24, 25; 1880, 34, 35; 1885, 35-37; 1892, 67-69; 1897, 28-33

Chalcididæ (associated with *Phytoptus ribis*), 1892, 63-67

Incurvaria capitella, Currant-shoot Moth, 1891, 44, 45; 1892, 70-74; 1896, 53-56

Nematus ribesii, Gooseberry and Currant Sawfly, 1895, 47-50

Otiorhynchus picipes, Night-feeding or Clay-coloured Weevil, 1883, 68

Phytoptus ribis, Currant Gall Mite, Knobbing, 1885, 33-35; 1887, 77-81; 1888, 90, 91; 1889, 42, 43; 1891, 40-43; 1892, 63-67; 1893, 90-95; 1894, 86-93; 1897 (Appendix), 141-158; 1898, 34-38

Pulvinaria ribesiæ, White Woolly Currant Scale, 1889, 43

Sesia tipuliformis, Currant Clearwing Moth, 1894, 43-47

CURRENT, FLOWERING, *Ribes sanguineum*

Pulvinaria ribesiæ, White Woolly Currant Scale, 1889, 43

CURRENT, RED, *Ribes rubrum*

Abraxas grossulariata, Currant Moth, Magpie Moth, 1879, 24, 25; 1880, 34, 35; 1885, 35-37; 1892, 67-69; 1897, 28-33

Incurvaria capitella, Currant-shoot Moth, 1891, 44, 45; 1892, 70-74; 1896, 53-56

Lecanium ribis (= *L. coryli*), Brown Currant Scale, 1898, 38-43

Nematus rebesii, Gooseberry and Currant Sawfly, 1895, 47-50

Otiorhynchus picipes, Night-feeding Weevil, 1883, 68

Pulvinaria ribesiæ, White Woolly Currant Scale, 1889, 43

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Sesia tipuliformis, Currant Clearwing Moth, 1894, 43-47

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Tipula sp., Daddy Longlegs, Crane Fly, 1879, 12

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Aphis (Phorodon) humuli, Damson and Hop Aphis, 1884, 46, 49; 1886, 52-54

Aphis (Phorodon) humuli var. *mahaleb*, Damson Aphis, 1886, 52, 54

Otiorhynchus picipes, 1883, 68

DOCK, *Rumex* sp.

Aphidæ, Plant Lice, 1880, 45

Aphis rumicis, Bean Aphis, 1880, 45, 46

Gortyna flavago, Frosted Orange Moth, 1881, 46

Hydræcia micacea, Potato-stem Borer, 1898, 101-104

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Heterodera (Anguillula) radiculicola, Eelworm, 1892, 134

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Heterodera (Anguillula) radiculicola, 1892, 133

ELDER, *Sambucus nigra*

Aphidæ, Plant Lice, 1880, 45

ELM, *Ulmus campestris*

Orchestes alni, Elm-leaf Maggots, 1881, 107

Orchestes scutellaris, Elm-leaf Maggots, 1881, 107

Pygæra bucephala, Buff-tip Moth, 1884, 68; 1887, 81-83; 1898, 1

Scolytus destructor, Elm-bark Beetle, 1897, 43-48

Vanessa polychloros, Large Tortoiseshell Butterfly, 1894, 7, 8

EQUISETUM sp.

Hydræcia micacea, Potato-stem Borer, 1898, 102, 103

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FIR, SCOTCH, *Pinus sylvestris*, 1878, 17; 1879, 31, 32, 38; 1881, 43; 1882, 86-88; 1883, 59, 61; 1887, 93-95; 1889, 89-92; 1890, 113-118, 121; 1891, 20, 21; 1896, 131, 141, 142; 1897, 60-68. (See CONIFERS)

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FIR, SPRUCE, *Abies excelsa*, 1878, 17; 1882, 89; 1889, 89-92; 1898, 94. (See CONIFERS)

FLAX, *Linum usitatissimum*

Plusia gamma, Silver Y-Moth, 1892, 31

FLIX-WEED, or FINE-LEAVED HEDGE MUSTARD, *Sisymbrium sophia*

Plutella cruciferarum, Diamond-back Moth, 1883, 75; 1884, 82; 1891, 160

FOXGLOVE, *Digitalis purpurea*

Gortyna flavago, Frosted Orange Moth, 1881, 46; 1892, 119

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GERANIUM sp.

Aphidæ, Plant Lice, 1880, 45

GOOSEBERRY, *Ribes grossularia*

Abraxas grossulariata, Currant and Gooseberry Moth, 1877, 16; 1878, 18, 19; 1880, 34, 35; 1882, 64; 1885, 35-37; 1892, 67-69; 1897, 28-33

Aphidæ, Plant Lice, 1880, 45

Bryobia prætiosa, Gooseberry and Ivy Red Spider, 1893, 32-38; 1894, 62-70; 1895, 40-45

Lecanium ribis (= *coryli*), Currant and Gooseberry Scale, 1898, 34-43

Mamestra persicariæ, Dot Moth, 1890, 61-64

Nematus ribesii, Gooseberry Sawfly, 1878, 22; 1879, 26-29; 1880, 36-39; 1881, 25-28; 1882, 64-67; 1883, 43-44; 1884, 39-43; 1895, 45-51

Otiorhynchus picipes, Clay-coloured Weevil, 1898, 78-82

GOOSE-FOOT, *Chenopodium* sp.

Plutella cruciferarum (= *Cerostoma xylostella*), Diamond-back Moth, 1883, 75

GORSE, *Ulex europæus*

Agrotis sp., Surface Caterpillars, 1896, 146

Aphis rumicis, Bean Aphis, 1884, 49

Bruchus granarius, Bean Weevil, 1878, 25, 26

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Agriotes sp., Wireworm or Click Beetle, 1898, 33

Agriotes lineatus, Wireworm or Click Beetle, 1879, 9; 1880, 6-8; 1882, 22-63; 1884, 36-39; 1885, 30-32

Agriotes obscurus, Wireworm or Click Beetle, 1882, 22-63

Aphis (*Siphonophora*) *granaria*, Grain Aphis, 1894, 25

Cecidomyia (? *tritici*), Wheat Midge, 1884, 31, 35

Charæas graminis, Antler Moth, Hill Grub, 1881, 21, 22; 1884, 15-18; 1885, 12-14; 1894, 12-23; 1895, 18-23; 1898, 33

Dolerus sp., Grass Sawfly Caterpillars, 1881, 22, 23

Hepialis lupulinus, Garden Swift Moth, 1885, 8-10; 1896, 41-43

GRASS (continued)

Melolontha vulgaris, Common Cockchafer, 1884, 62, 63; 1893, 22-31; 1896, 35, 39, 40; 1898, 33

Phyllopertha (*Anisoplia*) *horticola*, Garden Chafer, 1885, 22-24; 1892, 7-9; 1893, 22-31; 1895, 26; 1896, 35-40; 1898, 33

Plusia gamma, Silver Y-Moth, 1883, 78

Tipula sp., Daddy Longlegs, Crane Fly, 1898, 33

Tipula oleracea, Daddy Longlegs, Crane Fly, 1884, 19-28

Tyroglyphus siro, Hay Mite, 1890, 43

Tyroglyphus longior, Hay Mite, 1890, 40-45

GRASS, BLACK, *Alopecurus agrestis*, 1879, 9 (see GRASS)

GRASS, COCKS-FOOT, *Festuca* sp., 1894, 25 (see GRASS)

GRASS, MEADOW, *Poa* sp., 1894, 25 (see GRASS)

GRASS, MEADOW FOXTAIL, *Alopecurus pratensis*, 1884, 31-35 (see GRASS)

GRASS, SOFT BROME, *Bromus arvensis*, 1894, 25 (see GRASS)

GRASS, SOFT MEADOW, *Holcus* sp., 1894, 25 (see GRASS)

GRASS, WALL BARLEY, *Hordeum murinum*, 1894, 25 (see GRASS)

GRASS, WILD OAT, *Avena fatua*, 1894, 25 (see GRASS)

GUELDER ROSE, *Viburnum opulus*
Aphidæ, Plant Lice, 1880, 45

H.

HAWTHORN, *Cratægus oxycantha*

Carpocapsa pomonella, Codlin Moth, 1896, 2

Diloba cæruleocephala, Figure-of-8 Moth, 1888, 13, 14

Gastropacha quercifolia, Lappet Moth, 1893, 2

Hybernia rupicapraria, 1891, 69

Hyponomeuta malivorella, Small Apple Ermine Moth, 1888, 12, 13

Hyponomeuta padella, Small Ermine Moth, 1883, 3, 4; 1888, 12, 13; 1898, 12-15

Laverna atra (= *helerella*), Pith Moth, 1898, 12

Liparis auriflua, Gold-tail Moth, 1879, 37

Orgyia antiqua, Vapourer Moth, 1885, 63

Pygæra bucephala, Buff-tip Moth, 1884, 68; 1898, 1

Selandria atra (= *Eriocampa limacina*), Pear and Cherry Sawfly, 1893, 80

HICKORY, ? *Juglans* sp.

Xyleborus saxeseni (= *X. xylographus*), Shot-borer, Beetle, 1897, 81

HOGWEED, *Heracleum sphondylium*
Aphidæ, Plant Lice, 1880, 45
 HOP, *Humulus lupulus*
Aphidæ, Plant Lice, 1880, 45
Aphis (*Phorodon*) *humuli*, Hop Aphis,
 1882, 67-71; 1883, 45 (App.), 1-16;
 1884, 43-56; 1886, 52-54; 1887,
 83-86
Aphis (*Phorodon*) *humuli* var. *malaheb*,
 Damson-Hop Aphis, 1886, 52-54
Cecidomyia sp., Strig Fly, 1883, 47,
 48; 1891, 53-57; 1892, 74-76
Dilophus vulgaris (= *D. febrilis*), Fever
 Fly, 1884, 56, 57
Enacanthus interruptus, Hop Cuckoo
 Fly, Frog Fly, 1881, 28-31; 1882,
 73; 1883, 45-47
Forficula sp., Earwig, 1896, 70-72
Gortyna (*Hydræcia*) *immanis*, 1898,
 104
Julidæ, False Wireworms, Millepedes,
 1886, 54-57
Otiorhynchus picipes, Clay-coloured
 Weevil, 1898, 78-82
Otiorhynchus tenebriosus, Red-legged
 Weevil, 1898, 78-82
Plusia gamma, Silver Y-Moth, 1892,
 31
Psylliodes attenuatus, Hop Flea Beetle,
 1882, 71-73
Scymnus minimus, Minute Black Lady-
 bird Beetle, 1893, 44-46
Tetranychus telarius (= ? *T. tiliarum*),
 Red Spider, 1892, 121-124
Trombidiidæ, Aphis Harvest Mite,
 1885, 38, 39
 HOREHOUND, *Ballota foetida*
Hepialis lupulinus, Garden Swift
 Moth, 1896, 42
 HORSE-RADISH, *Cochlearia armoracia*
Pionea forficalis, Cabbage Garden
 Pebble Moth, 1891, 8-10

I.

IRIS sp.
Cetonia aurata, Rose Chafer Beetle,
 1895, 25
 IVY, *Hedera helix*
Bryobia pratiosa (? = *speciosa*), Ivy
 Red Spider, 1893, 33

J.

JACK-BY-THE-HEDGE, *Sisymbrium alli-
 aria*
Plutella cruciferarum (= *Cerostoma*
xylostella), Diamond-back Moth,
 1883, 75; 1891, 160

K.

KALE, *Brassica*
Agrotis segetum, Turnip Moth (Surface
 Caterpillars), 1887, 97

KALE (continued)

Cecidomyia brassicæ, Turnip and
 Cabbage Gnat Midge, 1896, 149
Pieris brassicæ, Large Cabbage White
 Butterfly, 1887, 87-89
 Knapweed, BLACK, *Centaurea nigra*
Aphidæ, Plant Lice, 1880, 45
 KNOT-GRASS, *Polygonum aviculare*
Phædon (*Gastrophysa*) *polygoni*, 1880,
 44
 KOHL RABI, *Brassica* sp.
Halticidæ, Turnip Flea Beetles, 1877,
 6, 7
Phædon betulæ, 1885, 55, 56
Plutella cruciferarum (= *Cerostoma*
xylostella), Diamond-back Moth,
 1892, 140

L.

LARCH, *Larix europæa*, 1884, 74, 75;
 1885, 54; 1889, 89-92; 1890, 113-
 118; 1891, 20, 21; 1896, 141, 142;
 1898, 94 (see CONIFERS)
 LEEK, *Allium porrum*
Agrotis sp. (Surface Caterpillar), 1884,
 87
Agrotis segetum, Turnip Moth (Surface
 Caterpillars), 1887, 97
Anthomyia platyura, Leek and Onion
 Fly, 1882, 77-80
Tryphæna sp., Surface Caterpillar,
 1884, 87
 LEGUMINOSÆ. Does not include all the
 plants of this order (see also BEAN,
 CLOVER, PEA, &c.)
Colias edusa, Clouded Yellow Butter-
 fly, 1892, 26-31
Plusia gamma, Silver Y-Moth, 1892,
 31-37; 1897, 58
 LETTUCE, *Lactuca sativa*
Aphidæ, Plant Lice, 1879, 37; 1880,
 45
Anthomyia lactucæ, Lettuce Fly, 1878,
 4
Forficula borealis, Earwig, 1886, 3
Hepialis lupulinus, Garden Swift
 Moth, 1885, 8-10; 1896, 41
Heterodera (*Anguillula*) *radicicola*,
 1892, 127
Plusia gamma, Silver Y-Moth, 1880,
 3, 4; 1883, 78
 LIME, *Tilia* spp.
Cheimatobia brumata, Winter Moth,
 1895, 64; 1896, 88-90
Hybernia defoliaria, Mottled Umber
 Moth, 1888, 14-18; 1896, 90-
 92
Pygæra bucephala, Buff-tip Moth,
 1884, 68
Tetranychus tiliarum (= ? *telarius*),
 Red Spider, 1892, 121-124
 LUCERNE, *Medicago sativa*
Colias edusa, Clouded Yellow Butter-
 fly, 1892, 27-31

M.

- MAIZE, *Zea mays*
Calandria granaria, Common Granary Weevil
- MANGOLD and BEET, *Beta vulgaris*
Agriotes sp., Wireworm or Click Beetle, 1877, 10; 1878, 12
Agrotis exclamatoris, Heart and Dart Moth (Surface Caterpillars), 1893, 54-60; 1896, 143-148
Agrotis segetum, Turnip Moth (Surface Caterpillars), 1885, 75-81; 1887, 96-101; 1893, 54-60; 1896, 143-148
Anthomyia (*Chortophila*) *betæ*, Mangold Leaf-blister Maggot, 1880, 42-44; 1881, 2-4; 1882, 9; 1883, 48-50; 1884, 63-67; 1886, 57; 1889, 54-56; 1890, 72, 73; 1891, 59-65; 1892, 83-89, 160-163; 1895, 55
Aphis sp., 1885, 39-44
Aphis rumicis, Bean Aphis, 1895, 51-56
Athous hæmorrhoidalis, Wireworm or Click Beetle, 1877, 10
Atomaria linearis, Pigmy Mangold Beetle, 1892, 77-83; 1895, 59-61; 1898, 68-71
Chortophila betarum, 1883, 49
Forficula borealis, Earwig, 1886, 3-6
Julidæ, False Wireworms, Millepedes, 1885, 44-51; 1889, 14, 15; 1894, 78-82
Melolontha vulgaris, Cockchafer, Maybug, 1884, 62
Otiorhynchus (? *niger*), Night-feeding Weevil, 1885, 53
Otiorhynchus picipes, Clay-coloured or Night-feeding Weevil, 1885, 54
Otiorhynchus sulcatus, Night-feeding Weevil, 1885, 54
Phædon polygoni, 1880, 44
Plusia gamma, Silver Y-Moth, 1883, 78; 1897, 56-59
Polydesmus complanatus, Flattened Millepede, 1894, 78-82
Pterostichus (*Steropus*) *madidus*, Ground Beetle, 1885, 51-53; 1895, 80-90; 1898, 64-68
Pterostichus (*Omaseus*) *vulgaris*, Ground Beetle, 1898, 64-68
Silpha opaca, Beet Carrion Beetle, 1884, 59-62; 1888, 91-96; 1891, 58, 59; 1895, 57-59; 1896, 14-16
Tipula oleracea, Daddy Longlegs, Crane Fly, 1883, 31
- MAPLE, *Acer campestre*
Xyleborus saxeseni (= *xylographus*), Shot-borer Beetle, 1897, 81
- MAY-WEED, *Anthemis* ? *cotula*
Aphis, Plant Lice, 1880, 45
- MEADOW-SWEET, *Spiræa ulmaria*
Aphis, Plant Lice, 1880, 45
Galeruca tenella, 1892, 124

- MEDLAR, *Mespilus germanica*
Cetonia aurata, Rose Chafer, 1895, 25
- MELON, *Cucumis melo*
Heterodera (*Anguillula*) *radicicola*, Root-knot Eelworm, 1892, 133
- MOUSE-EAR, *Cerastium* sp.
Aphis, Plant Lice, 1880, 45
- MULLEIN, *Verbascum* sp.
Gortyna flavago, Frosted Orange Moth, 1881, 46; 1892, 119
- MUSTARD, *Sinapis* sp.
Agrotis segetum, Turnip Moth (Surface Caterpillars), 1886, 86
Ceutorhynchus assimilis, Turnip-seed Weevil, 1886, 58-76; 1891, 96-105; 1893, 62; 1897, 126-129; 1898, 130-133
Ceutorhynchus contractus, Charlock Weevil, 1893, 74-79; 1894, 83-86
Haltica nemorum, Turnip Flea Beetle, 1886, 58-76; 1893, 60-74
Meligethes æneus, Turnip-flower Beetle, 1886, 58-76; 1893, 61, 63, 64
Phædon betulæ, Mustard Beetle, Black Jack, 1879, 35, 36; 1882, 74-76; 1885, 55-58; 1886, 58-76; 1892, 90-99; 1893, 60-74
- MUSTARD, FINE-LEAVED HEDGE, or FLIX-WEED, *Sisymbrium sophia*
Plutella cruciferarum, Diamond-back Moth, 1883, 75; 1884, 82; 1891, 160
- MUSTARD, NARROW-LEAVED WALL, *Diplo-taxis tenuifolia*
Plutella cruciferarum (= *Cerostoma xylostella*), Diamond-back Moth, 1891, 160
- MUSTARD, WALL, ? *Brassica*
Plutella cruciferarum (= *Cerostoma xylostella*), Diamond-back Moth, 1883, 75

N.

- NECTARINE, *Amygdalus persica* var.
Phyllopertha (*Anisoplia*) *horticola*, Garden Chafer, 1892, 6
- NETTLE, *Urtica* sp.
Aphis, Plant Lice, 1880, 45
Aphis (*Phorodon*) *humuli*, Hop Aphis, 1883, Appendix, 2, 9, 10
Plusia gamma, Silver Y-Moth, 1883, 78; 1892, 36
- NETTLE, DEAD, *Lamium album* and *L. purpureum*
Hepialus lupulinus, Garden Swift
- NUT, *Corylus avellana*
Cheimatobia brumata, Winter Moth, 1888, 1
Otiorhynchus picipes, Clay-coloured Weevil, 1883, 68
Phyllobius maculicornis, Green Leaf Weevil, 1888, 4-6

NUT (continued)

- Phyllobius (Nemoicus) oblongus*, Oblong Leaf Weevil, 1896, 128-131
Phytoptus avellanæ (= *P. vermiformis*), Hazel and Filbert Bud Mite, 1898, 75-77

O.

OAK, *Quercus robur*

- Aphidæ*, Plant Lice, 1880, 45
Cheimatobia brumata, Winter Moth, 1895, 62-70; 1896, 84-103
Cossus ligniperda, Goat Moth, 1881, 32, 33
Cynips Kollari, Oak Marble Gall, 1881, 31
Emphytus serotinus, Oak Sawfly, 1896, 87
Emphytus tibialis, Oak Sawfly, 1896, 87
Hybernica defoliaria, Mottled Umber, 1888, 14-18; 1896, 84-103
Lymexylon navale, Dockyard Beetle, 1886, 77-80
Neuroterus lenticularis, Common Spangle Gall, 1877, 17; 1878, 19; 1881, 32
Phylloxera quercus, Oak Phylloxera, 1884, 49
Pygæra bucephala, Buff-tip Moth, 1884, 68; 1898, 1
Tortrix viridana, Green Tortrix Moth, 1881, 33-35; 1882, 77; 1885, 59-61; 1896, 84-103
Trypodendron lineatum (= *Xyloterus lineatus*), Striped Pine-boring Beetle, 1898, 94
Xyleborus saxeseni (= *X. xylographus*), Shot-borer Beetle, 1897, 81

OAK, EVERGREEN, *Quercus ilex*

- Pygæra bucephala*, Buff-tip Moth, 1887, 82, 83

OAT (see CORN)

OKRA, *Abelmoschus esculentus*

- Heterodera (Anguillula) radiculicola*, Eelworm, 1892, 133

ONION, *Allium cepa*

- Agrotis segetum*, Turnip Moth (Surface Caterpillars), 1887, 97
Anobium paniceum, Bread or Paste Beetle, Drug-store Beetle, 1898, 77, 105
Anthomyia ceparum (= *Phorbia ceparum*), Onion Fly, 1877, 7; 1878, 7; 1879, 12, 13; 1880, 15-18; 1881, 35-38; 1882, 77-80; 1883, 50-52; 1884, 69-71; 1892, 100-104
Anthomyia platura, Shallot Fly, 1892, 100-104
Julidæ, False Wireworms, Millepedes, 1884, 79; 1894, 79
Tylenchus devastatrix, Onion-sickness, Eelworm, 1896, 44, 107-115; 1897, 94

ORACHE, *Atriplex*

- Plutella cruciferarum* (= *Cerostoma xylostella*), Diamond-back Moth, 1883, 75

ORANGE, *Citrus* sp.

- Heterodera (Anguillula) radiculicola*, Eelworm, 1892, 133

OSIER (see WILLOW)

P.

PARSLEY, *Petroselinum sativum*

- Depressaria heracleana*, Parsnip-seed Moth, 1882, 80, 81
Hepialis lupulinus, Garden Swift Moth, 1885, 8-10; 1896, 41
Heterodera (Anguillula) radiculicola, Eelworm, 1892, 127
Julidæ, False Wireworms, Millepedes, 1886, 55
Peronospora nivea, Parsley Fungus
PARSNIP, *Pastinaca sativa*
Tephritis onopordinis, Parsnip and Celery-leaf Miner, 1877, 10, 11

PEA, *Pisum sativum*

- Aphidæ*, Plant Lice, 1880, 45
Aphis (Siphonophora) pisi, Pea Aphis, 1885, 62, 63
Bruchus granarius, Bean and Pea Weevil, 1878, 25, 26
Heterodera (Anguillula) radiculicola, Eelworm, 1892, 133
Julidæ, False Wireworms, Millepedes, 1894, 79
Plusia gamma, Silver Y-Moth, 1879, 5; 1880, 3, 4; 1883, 78; 1897, 58
Sitones crinitus, Pea and Bean Weevil, 1881, 38, 39
Sitones lineatus, Striped Pea and Bean Weevil, 1878, 21; 1879, 7; 1880, 5, 6; 1881, 38, 39; 1882, 81-84; 1883, 57-59; 1884, 3-5; 1886, 80, 81; 1892, 101-116
Tipula oleracea, Daddy Longlegs, Crane Fly, 1880, 10; 1881, 16
PEA, WILD, *Lathyrus* sp.
Heterodera (Anguillula) radiculicola, Eelworm, 1892, 133
Rhizotrogus solstitialis, Chafer Beetle, 1895, 23
PEACH, *Amygdalus persica*
Aphidæ, Plant Lice, 1879, 37
Carpocapsa pomonella, Codlin Moth, 1896, 2
Heterodera (Anguillula) radiculicola, 1892, 127, 133
Otiorynchus sulcatus, Night-feeding Weevil, 1878, 21
Phyllobius (Nemoicus) oblongus, Oblong Leaf Weevil, 1896, 126-131
PEAR, *Pyrus communis*
Aphidæ, Plant Lice, 1879, 37
Carpocapsa pomonella, Codlin Moth, 1896, 2

PEAR (continued)

- Diplosis pyrivora* (= *Cecidomyia nigra*), Pear Midge, 1883, 52-54; 1896, 116-121; 1898, 84-92
- Gastropacha quercifolia*, Lappet Moth, 1893, 2
- Hyponomenta padella*, 1888, 12, 13
- Lyda pyri* = *L. chypeata* (= *L. fasciata*), Pear Lyda, Social Pear Sawfly, 1896, 121-124
- Orgyia antiqua*, Vapourer Moth, 1885, 63, 64; 1890, 79, 80
- Phytoptus* (*Typhlodromus*) *pyri*, Pear Leaf-blister Mite, 1893, 84-89; 1894, 86-93
- Selandria atra* (= *Eriocampa limacina*), Slugworm, Pear and Cherry Sawfly, 1879, 26; 1880, 36; 1887, 90-92; 1893, 79-83; 1896, 125-128
- Vanessa polychloros*, Large Tortoiseshell Butterfly, 1894, 7, 8
- PINE, AUSTRIAN, *Pinus austriaca*, 1879, 29-32; 1881, 43; 1883, 59, 61; 1890, 113-118 (see CONIFERS)
- PINE, CORSICAN, *Pinus laricio*, 1881, 43 (see CONIFERS)
- PINE, SCOTCH, *Pinus sylvestris*, 1878, 17; 1879, 31, 32, 38; 1881, 43; 1882, 86-88; 1883, 59-61; 1887, 93-95; 1889, 89-92; 1890, 113-118, 121, 1891, 20, 21; 1896, 131-142; 1897, 60-68 (see CONIFERS)
- PINE, WEYMOUTH, *Pinus strobus*, 1890, 113-118 (see CONIFERS)
- PLUM, *Prunus domestica*
- Anisopteryx æscularia*, March Moth, 1890, 74, 77, 78
- Aphidæ*, Plant Lice, 1879, 37
- Aphis* (*Phorodon*) *humuli*, Hop Aphis, 1883, Appendix, 2, 6, 7; 1887, 83-86
- Carpocapsa pomonella*, Codlin Moth, 1896, 2
- Cheimatobia brumata*, Winter Moth, 1888, 1; 1891, 66-82
- Diloba cæruleocephala*, Figure-of-8 Moth, 1888, 13, 14
- Hybernina defoliaria*, Mottled Umber Moth, 1891, 67
- Hyponometa malivorella*, Apple Ermine Moth, 1888, 12, 13
- Hyponometa padella*, Small Ermine Moth, 1880, 34; 1888, 12, 13
- Orgyia antiqua*, Vapourer Moth, 1890, 79, 80
- Otiorhynchus picipes*, 1898, 78-82
- Phyllobius maculicornis*, Green Leaf Weevil, 1888, 4-6
- Phyllobius* (*Nemoicus*) *oblongus*, Oblong Leaf Weevil, 1896, 128-131
- Phyllopertha* (*Anisoplia*) *horticola*, Garden Chafer, 1892, 8, 9
- Phytoptus similis*, Plum-leaf Funnel-shaped Galls, 1893, 88, 89
- Scolytus rugulosus*, Wrinkled Fruit-tree Beetle, 1895, 76-79

PLUM (continued)

- Selandria atra*, Pear and Cherry Sawfly, 1893, 80
- Selandria* (*Tenthredo*) *morio*, Plum Sawfly, 1891, 82, 85
- Xyleborus* (*Bostrichus*) *dispar* (= *X. pyri*), Shot-borer Beetle, 1889, 92-98, 125-127; 1890, 124, 125; 1897, 74-85
- Xyleborus saxeseni* (= *X. xylographus*), 1897, 74-85
- POPLAR, *Populus canescens* and *P. alba*
- Clostera reclusa* (= *C. pigra*), Chocolate-tip Moth, 1893, 141-145
- Cossus ligniperda*, Goat Moth, 1883, 63-65
- Dicranura* (*Cerura*) *vinula*, Puss Moth, 1885, 65, 66
- Pygera bucephala*, Buff-tip Moth, 1898, 1
- Zenzera æsculi*, 1880, 32, 33
- POPPY, *Papaver* sp.
- Aphidæ*, Plant Lice, 1880, 45
- POTATO, *Solanum tuberosum*
- Acherontia atropos*, Death's-head Moth, 1882, 90; 1884, 76, 77; 1892, 116-118
- Agriotes lineatus*, Wireworm or Click Beetle, 1882, 58, 60, 62
- Agriotes obscurus*, Wireworm or Click Beetle, 1882, 58, 60, 62
- Agrotis segetum*, Turnip Moth (Surface Caterpillars), 1881, 46; 1887, 97-101; 1893, 57
- Forficula* sp., Earwig, 1896, 71
- Gortyna flavago*, Frosted Orange Moth, 1881, 45, 46; 1892, 118-120
- Hepialus lupulinus*, Garden Swift Moth, 1885, 8-10; 1896, 41
- Heterodera* (*Anguillula*) *radicicola*, Eelworm, 1892, 127
- Hydræcia micacea*, Potato-stem Borer, 1898, 101-104
- Julus* sp., False Wireworms, Millepedes, 1877, 79; 1886, 54-57; 1889, 14, 15; 1894, 79
- Melolontha vulgaris*, Common Cockchafer, 1884, 62
- Otiorhynchus sulcatus*, Night-feeding Weevil, 1878, 20; 1879, 7
- Pterostichus* (*Steropus*) *madidus*, Ground Beetle, 1885, 53
- PROTOCOCCUS
- Oribata lapidaria*, Bark Mite, 1897, 82-84
- PRUNUS sp. (see PLUM)
- PURPLE LOOSESTRIFE
- Aphidæ*, Plant Lice, 1880, 45

Q.

QUERCUS sp.

- Selandria atra*, Pear and Cherry Sawfly, 1893, 80
- QUINCE, *Cydonia vulgaris*
- Carpocapsa pomonella*, Codlin Moth, 1896, 2

QUINCE (continued)

Vanessa polychloros, Large Tortoise-shell Butterfly, 1894, 8

R.

RADISH, *Rhaphanus sativus*

Aphidæ, Plant Lice, 1880, 45

Heterodera (*Anguillula*) *radicicola*, Eelworm, 1892, 133

RAPE, *Brassica napus*

Cecidomyia brassicæ, Turnip and Cabbage Gnat Midge, 1896, 151, 152

Cecidomyia (*Diplosis*) *ochracea*, Gnat Midge, 1896, 152

Ceutorhynchus assimilis, Turnip-seed Weevil, 1891, 97; 1898, 130

Ceutorhynchus sulcicollis, Cabbage and Turnip Gall Weevil, 1892, 145; 1895, 17

Haltica (*Phyllotreta*) *nemorum*, Turnip Flea Beetle, 1881, 58, 97

Meligethes æneus, Turnip-flower Beetle, 1891, 97, 98

Phædon betulæ, 1885, 55

Plutella cruciferarum (= *Cerostoma xylostella*), Diamond-back Moth, 1883, 73; 1892, 140

RASPBERRY, *Rubus idæus*

Aphidæ, Plant Lice, 1880, 45

Byturus tomentosus, Raspberry Beetle, 1883, 65, 66; 1891, 83-89

Hepialus lupulinus, Garden Swift Moth, 1896, 41

Lampronia rubiella, Raspberry Stem-bud Caterpillar, 1883, 66-68; 1891, 89-95

? *Lasioptera rubi*, Red Maggot, Gall Midge Maggot, 1884, 80

Lecanium ribis (= *L. coryli*), Raspberry and Currant Scale, 1898, 39

Otiorhynchus picipes (= *septentrionis*), Clay-coloured Weevil, 1879, 6, 7; 1888, 97, 98

Otiorhynchus sulcatus, Black Vine Weevil, 1880, 4, 5; 1888, 97, 98

REED, *Phragmites communis*

Aphidæ, Plant Lice, 1880, 45

ROSES, *Rosa* spp.

Cetonia aurata, Rose Chafer, 1895, 26

Forficula borealis, Earwig, 1886, 3

Orgyia antiqua, Vapourer Moth, 1885, 63

Phyllopertha (*Anisoplia*) *horticola*, Garden Chafer, 1885, 23; 1892, 6-9; 1893, 22-31; 1895, 28

RUBUS sp.

Selandria atra (= *Eriocampa limacina*), Pear and Cherry Sawfly, 1893, 80

RUNCHES, SCOTCH (see CHARLOCK)

RUSH, ROUND-FRUITED, *Juncus squarrosus*
Charæas graminis, Antler Moth, 1895, 20

RYE, *Secale cereale*

Calandra granaria, Granary Weevil, 1887, 72

Tylenchus devastatrix, Eelworm, 1887, 5

S.

SAINTFOIN, *Onobrychis sativa*

Agriotes sp., Wireworm or Click Beetle, 1878, 12

Colias edusa, Clouded Yellow Butterfly, 1877, 16; 1892, 30

SALLOW (see WILLOW)

SALTWORT, *Salsola kali*

Plutella cruciferarum (= *Cerastoma xylostella*), Diamond-back Moth, 1883, 75; 1891, 160

SEDGE, *Carex* sp.

Miana (? *expolita*), Young Wheat Moth Caterpillar, 1894, 40

SEDUM sp.

Tipula oleracea, Daddy Longlegs, Crane Fly, 1880, 14

SHALLOT, *Allium ascalonicum*

Anthomyia platura, Shallot Fly, 1882, 77-80; 1892, 100-104

SILVER-WEED, *Potentilla anserina*

Galeruca tenella, Strawberry-leaf Weevil, 1892, 124

SKELLOKS, SCOTCH (see CHARLOCK)

SLOE (see BLACKTHORN)

SNOWDROP, *Galanthus nivalis*

Hepialus lupulinus, Garden Swift Moth, 1896, 41

SORREL, *Rumex acetosa*

Plusia gamma, Silver Y-Moth, 1897, 57

SPINACH, *Spinacia oleracea*

Agrotis segetum, Turnip Moth (Surface Caterpillar), 1887, 97

STRAWBERRY, *Fragaria* sp.

Aphelenchus fragariæ, Cauliflower Disease, 1890, 126-133

Calathus cisteloides, Ground Beetle, 1894, 93-97; 1895, 83

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